

HEPATICÆ AUSTRALES.

By Dr. FRANZ STEPHANI and the Rev. W. WALTER WATTS.

(Communicated by Mr. J. H. MAIDEN.)

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Introduction.

By W. WALTER WATTS.

FOR some years I have been in the habit of sending specimens of Hepatics, collected in various parts of Australia, to Dr. Franz Stephani, of Leipsic, whose phenomenal labours in this family of Cryptogamic plants have won for him a world-wide fame. My own collecting has been done, mainly, in the following districts:—the Richmond River; the Blue Mountains, including Mount Wilson; New England; Yarrangobilly; the South Coast as far down as Cambewarra; and Wyong, about 60 miles north of Sydney. A considerable number of new species, collected by me and by the late Mr. W. Forsyth, have already been described by Dr. Stephani and published in his great systematic work, “Species Hepaticarum.” The present paper contains descriptions of 49 new species by Dr. Stephani, and many new records, which will form a substantial addition to our knowledge of the Hepatics of Australia, and especially of New South Wales.

Through the kind services of Dr. Annand and the Rev. F. G. Bowie, M.A., of Tangoa, Santo, of the Rev. T. Riddle, late of Epi, and particularly of the Rev. Dr. Gunn, of Aneityum and Futuna, I have been enabled to send to Dr. Stephani a considerable number of specimens from the New Hebrides; as well as material collected by myself on Lord Howe Island. Some of Dr. Gunn’s material reached Dr. Stephani through the Rev. David Lillie, of Caithness, N.B.

In the present paper, Dr. Stephani describes 27 new species from the New Hebrides and 6 from Lord Howe Island. The new species found in Mr. Lillie's parcel are not described herein, but are placed on record in the belief that they are described, or are about to be described, elsewhere. Dr. Gunn is to be congratulated upon the remarkably interesting material collected by him, and by the natives under his direction ; and it is to be sincerely hoped that he will continue to prosecute his researches.

The new Australian species herein described, and the records herein published, may be compared with those published by Carrington and Pearson in the Proceedings of the Linnean Society of N.S.W. in 1887, p. 1035, collected by Mr. Thomas Whitelegge. Unless otherwise stated, all the Australian species herein recorded were collected by me.

Hepaticæ Australes.

Aneura aequicellularis St., n.sp.

Sterilis parva gracillima, viridis, in rupibus humidis pulvinatim caespitans. *Frons* ad 2 cm. longa, pinnata et bipinnata, in sectione transversa biconvexa (0·67 mm. lata, 0·25 mm. crassa) marginibus acutis. *Cellulae corticales* 27 × 72 μ , internæ vix minores. Reliqua desunt.

Hab. Australia, New South Wales, (Wentworth Falls): Watts legit No. 1117.

Aneura bipinnata St., Blackheath, N.S.W.

Aneura gigantea St., n.sp.

Sterilis. *Frons* ad 8 cm. longa, 15 mm. lata, tenuis, flaccida, rufescens vel fusco-brunnea in sicco subatra, marginibus breviter lateque inciso-lobatis, lobis oblique patulis, integerrimis vel apice minute inciso-bidentulis. *Cellulae corticales* unistratosae, tenerimae parvae, duplo longiores quam latae, cellulae *internaæ* multoties majores, unistratosae, 0·13 mm. latae, 0·25 mm. longae.

Hab. Australia, N.S. Wales, (Cambewarra): Watts legit No. 920.

Aneura Gunniana St., n.sp.

Dioica mediocris, pallide virens, in cortice dense depresso-caespitans. *Frons* ad 2 cm. longa, irregulariter longeque pinnata et bipinnata, tenuis (1·83 mm. lata, 0·17 mm. crassa) ramis truncō subaequalitis, omnibus plano-convexis, utrinque longe attenuatis, cuticula levis. *Frondis cellulæ internæ subaequales*, corticales multo majores (in sectione transversa). *Rami masculi* in truncō numerosi, minute spicati, alveolis paucijugis.

Hab. Insulae Novae Hebridae (Aneityum): Dr. Gunn legit (Watts 57).

Aneura hebridensis St., n.sp.

Monoica, minor, pallide virens, flaccida, pulvinatim caespitans. *Frons* ad 2 cm. longa, irregulariter longeque bipinnata, in sectione transversa biconvexa, triplo latior quam crassa, marginibus acutis; rami vix angustiores, simillimi, saepe flagellatim attenuati, radicantes. *Cellulæ frondis internæ aequimagnæ*, quam corticales multo majores. *Rami feminei* (steriles) capitati, piliferi, rami masculi validi, alveolis numerosis.

Hab. Novae Hebridae (Aneityum): Dr. Gunn legit (Watts, 57a)

Aneura pusilla St., n.sp.

Sterilis, exigua, in rupibus calcareis caespitans. *Frons* ad 15 mm. longa, regulariter breviterque bipinnata; truncus primarius 1·17 mm. latus, plano-biconvexus, 0·25 mm. crassus, marginibus frondis utrinque obtusis, facie postica subplana; rami gradatim angustiores, ultimis filiformibus saepe flagellatim attenuatis radicantibus. *Cellulæ frondis corticales parvae*, internæ multo majores, centrales maximaæ, parietibus ubique tenuibus.

Hab. Australia, (Old Railway Cutting, Blackheath): Watts legit, 1051.

Aneura rufescens St., n.sp.

Dioica maxima rigidula, dilute brunnea, dense depresso caespitans, muscis consociata, terricola. *Frons* ad 6 cm. longa, regulariter breviterque pinnata, pinnis brevibus, 5 mm. longis, apice saepe flagellatis, radicantibus, in truncō ramisque anguste alata, alis

2 – 3 cellulas latis; in sectione transversa plano-biconvexa (medio 10 cellulas crassa) cellulae corticales multo minores. *Androecia* numerosa, in ramulis pusillis, alveolis 6 – 8 jugis. Reliqua desunt.

Hab. Australia, New South Wales, (National Pass, Wentworth Falls): Watts legit, 1124.

Aneura tasmanica St., Horse Shoe Falls, Blackheath, N.S.W.

Aneura Walesiana St., n.sp.

Dioica, mediocris, rufescens, rigidula, in rupibus humidis dense depresso-caespitans. *Frons* ad 25 mm. longa, regulariter brevi-terque pinnulata; pinnis approximatis, oblique patulis, trunco primario duplo angustioribus, 4 – 5 mm. longis, linearibus, rarius flagellatim attenuatis; truncus primarius anguste biconvexus, 2·17 mm. latus, medio 0·33 mm. crassus; *cellulae* internae magnae aequales, corticales multo minores; rami masculi breves, alveolis paucijugis.

Hab. Australia, New South Wales, (Blackheath): Watts legit, 1023.

Archilejeunea Wattsiana St., n.sp.

Autoica, mediocris, flavescens, flaccida, corticola, dense depresso-caespitans. *Caulis* ad 2 cm. longus, irregulariter remoteque pinnatus. *Folia* caulina conferta, recte patula, parum concava, in plano ovato-elliptica; symmetrica (2 mm. longa, ubique 1·5 mm. lata) apice late rotundata, brevissima basi inserta, basi antica longe truncata, caulem vix tegentia, integerrima. *Cellulae* superae 18/18 μ , basales 27/36 μ , trigonis magnis. *Amphigastria caulina* late obconica, caule quintuplo-latiore, transverse inserta, apice late truncato-rotundata, integerrima. *Perianthia* utrinque innovata, obovato-oblonga (3 mm. longa, 1·5 mm. lata) apice truncato-rotundata, rostro parvo, plicis posticis angustis, longe decurrentibus, divergentibus. *Folia floralia* perianthio parum breviora, obovato-oblonga, acuta, superne regulariter minuteque dentata, falcatim patula, *lobulus* tertio brevior, linearis, breviter solutus, acutus. *Amphigastrium florale* lobulis aequilongum ligulatum, leviter

obconicum, apice breviter emarginato-bidentatum irregulariterque spinulosum. *Androecia* in parvis ramulis terminalia, bracteis quadrijugis.

Hab. Lord Howe Island, (Transit Hill): Watts legit, 127.

Balantiopsis decurrents St., n.sp.

Sterilis mediocris, flaccida, flavo-rufescens, terricola, dense depresso-caespitans, subpulvinata. *Caulis* ad 2 cm. longus, parum longeque ramosus. *Folia caulinata* conferta, recte patula, leviter concava, decurvula, in plano anguste oblonga (2·17 mm. longa, medio 1 mm. lata, basi utrinque breviter decurrentia, apice late emarginata, angulis spina valida armatis; adsuntspinae 2, medianae ad remotae in margine supero foliorum. *Cellulae* superae 18/18 μ , basales 18/36 μ , paucis majoribus interjectis 18/54 μ ; cuticula aspera. *Lobulus* folio oblique incumbens, duplo brevior, 1 mm. longus et latus, carina 0·67 mm. longa, leviter sinuata, apice late emarginatus, angulis spina valida armatis, sub apice utrinque remote bidentulus. *Amphigastria caulinata* lobulo aequimagna, profunde sinuatim inserta angusteque decurrentia, profunde bifida, sinu angusto, lobis linearibus, apice trisetosis, supra basin utrinque unidentata, medio utrinque longa seta inserta, setis apice breviter furcatis.

Hab. Australia, (Wyong): Watts, 985.

Balantiopsis diplophylla (Tayl.) Mitt. Valley of Waters, N.S.W.

Balantiopsis hastatistipula St., n.sp.

Sterilis, mediocris, flaccida, rufescens, terricola, laxe intricata. *Caulis* ad 3 cm. longus, parum longeque ramosus. *Folia* caulinata conferta, oblique patula, decurva, in plano oblonga (2·17 mm. longa, medio 1 mm. lata) apice breviter emarginato-biloba, sinu subrecto, lobis late triangulatis acutis porrectis, sub apice utrinque unispinis. *Cellulae* superae 18/27 μ , basales 18/72 μ trigonis nullis. *Lobulus* anticus folio oblique incumbens aequilatus, rhomboideus, apice late truncatus, grosse quadrifidus, laciinis inaequalibus, superis validioribus, omnibus e lata basi cuspidatis. *Amphigastria caulinata* lobulo foliorum aequimagna, sinuatim inserta, basi hastatim

hamata, supra basin utrinque longa seta armata, apice ad medium biloba, lobis late linearibus, apice longissime emarginato-bispinosus.

Hab. Australia, (Blackheath), Watts, 1052.

Balantiopsis Kingwella St., n.sp.

Sterilis mediocris, flaccida, tenerrima, flavicans, terricola, dense depresso-caespitans. *Caulis* ad 25 mm. longus, simplex vel parum longeque ramosus. *Folia caulina* conferta, oblique patula, leviter decurva, in plano ovata (1·67 mm. longa, medio 1·1 mm. lata) apice ad 1/6 emarginato-biloba, sinu semirotundo, segmentis e lata basi setaceis, porrectis, sub apice utrinque remote bisetulis. *Cellulae* superae 27/27 μ , basales 18/54 μ , trigonis nullis, cuticula striolata. *Lobulus* folio duplo minor, oblique incumbens, ovatus, carina folio triplo brevior, substricta, apice ad 1/4 emarginato-bilobatus, lobis e lata basi attenuatis, apice setaceis, sub apice varie spinosus, spinis 1 – 3. *Amphigastria caulina* folio multo minora (0·83 mm. longa et lata) apice breviter biloba, lobis apice emarginato-bisetulis, sub apice utrinque quadriseta.

Hab. Australia, (Kingwell, Wyong): Watts, 943.

Balantiopsis pusilla St., n.sp.

Sterilis pusilla rufescens, in rupibus dense depresso-caespitans. *Caulis* ad 15 mm. longus, tenuis, parum longeque ramosus. *Folia* *caulina* contigua, oblique patula, plana, oblongo-elliptica (1 mm. longa, medio 0·67 mm. lata) laciniis exceptis, apice longe trifida, laciniis remotis, angustis 0·17 mm. ad 0·25 mm. longis. *Cellulae* foliorum superae 18/36 μ , basales 18/54 μ trigonis minutis. *Lobulus* majusculus, folio triplo brevior, e lata basi lanceolatus, inaequaliter bifidus. *Amphigastria* *caulina magna*, ambitu obovata, disco basali integro obtuse-angulato, supra basin utrinque bidentato, apice longissime bifido, laciniis linearibus, disco aequilongis, apice breviter furcatis.

Hab. Australia occidentalis (Herb. Watts). [I have no trace of this.—W.W.W.]

Balantiopsis subkingwella St., n.sp.

Dioica, mediocris flaccida, dilute brunnea, terricola, laxe caespitans. *Caulis* ad 25 mm. longus, simplex vel parum longeque

ramosus. *Folia caulinata conferta*, oblique patula, parum concava, in plano oblonga (2 mm. longa, 0·83 mm. lata) apice vix angustiore, brevi basi inserta, apice ligulata, margine *supero* 8 spinoso, spinis irregularibus, validis et angustis, plus minus longis mixtis, apice ad 1/6 inciso-biloba, sinu recto, lobis late triangulatis, longis apiculatis, margine *infero* superne paucispinoso. *Cellulae* superae 18/27 μ , basales 18/54 μ , mediae 18/36 μ , trigonis nullis, cuticula striolata. *Amphigastria caulinata magna* (ambitu 1·33 mm. longa, 1·67 mm. lata) sinuatim inserta, supra basin utrinque unispina, medio utrinque grosse unispina, spinis supra basin utrinque longa seta armatis, apice longe bifida (0·83 mm. longa) segmentis validis, apice geminatim bifidis, sub apice utrinque longa seta armatis. *Sacculus floralis* grosse cylindricus; folia floralia caulinis simillima, majora. *Androecia* desunt.

Hab. Australia (Kingwell, Wyong): Watts, 945, 971a.

Balantiopsis Wattsiana St., n.sp.

Sterilis mediocris, flaccida, flavo-rufescens, terricola, dense depresso-caespitans. *Caulis* ad 2 cm. longus, simplex vel parum longeque ramosus. *Folia caulinata conferta*, oblique patula, leviter decurva, in plano late obovata (1·83 mm. longa, 1 mm. lata) symmetrica, apice ad 1/5 biloba, sinu recto obtuso, lobis late triangulatis cuspidatis, sub apice utrinque remote valideque trisetosa. *Cellulae* superae 18/36 μ , basales 27/90 μ , parietibus tenuibus, cuticula levis. *Lobulus* folio duplo minor subquadratus, carina brevis, folio oblique incumbens, apice latissime emarginatus, grosse bilobatus, lobis e lata basi longe setosis, sub apice utrinque remote bispinosus. *Amphigastria caulinata* lobulo foliorum subaequimagna, transverse inserta, ad 2/3 inciso-bifida, disco basali integro obtuseato, lacinii lanceolatis longeque in setam excurrentibus, in sinu nudis, extus remote grosseque trisetosis.

Hab. Australia, N.S. Wales, (Blackheath and Wyong): Watts leg. 940a, 973, 949, etc.

Brachiolejeunea grossivitta St., n.sp.

Sterilis magna, robusta, flaccida, rufo-brunnea, corticola, dense depresso-caespitans. *Caulis* ad 5 cm. longus, irregulariter pinnatus,

pinnis 1 - 2 cm. longis, simplicibus, paucis longioribus interjectis, similiter pinnulatis. *Folia* caulinæ confertissima, oblique patula, falcata, canaliculatim concava, in plano ovato-oblonga (2 mm. longa, medio 1 mm. lata) ad medium inserta, apice acuta, basi antica rotundata, caulem tegentia, integerrima. *Cellulae* foliorum superae 18/18 μ , basales 18/54 μ , parietibus tenuibus. *Lobulus* folio quadruplo brevior, ovato-triangulatus, carina substricta, amplio sinu in folium excurrens, apice quam basis quadruplo angustiore, truncato, angulo spina valida porrecta armato. *Amphigastria* caulinæ magna (1 mm. longa et lata) transverse inserta, subrotunda, medio gibbosa, integerrima.

Hab. Novæ Hebridae (Aneityum): Gunn legit (Watts, 23).

Chandonanthus difficilis St., n.sp.

Sterilis magna robusta rigida, flavo-rufescens, terricola, laxe intricata lateque expansa. *Caulis* ad 7 cm. longus, simplex vel parum longeque ramosus. *Folia* caulinæ confertissima, valde concava, squarrose patula, in plano 3·4 mm. lata, 2 mm. longa, profundissime quadrifida, laciniis canaliculatim concavis, cuspidatis, remote grosseque spinosis, inaequalibus, *lacinia supera* valde irregulariter armata, spinis plus minus longis, validis vel angustis iterum spinosis vel nudis, hamatis vel strictis, *laciniae reliquæ latiores*, apice grosse trifidae, sparsim valideque spinosae, lacinia quarta ultima integerrima. *Amphigastria* caulinæ parva, breviter bifida, marginibus ubique irregulariter spinosis.

Hab. Novæ Hebridae (Aneityum): Gunn leg. (Watts, 29).

Chandonanthus fragillima St., Aneityum: comm. Gunn,
per Rev. D. Lillie.

Chandonanthus hamatus St., Aneityum and Futuna: com.
Gunn, (Herb. Watts).

Cheilolejeunea hamata St., n.sp.

Dioica major gracillima, viridis, flaccida, corticola, dense depresso-caespitans maximeque intricata. *Caulis* ad 6 cm. longus, bipinnatus, ramis primariis 2 cm. longis, ubique remote minuteque pinnatis. *Folia* caulinæ oblique patula, parum imbricata, concava

apiceque decurva, in plano ovata (0·9 mm. longa, medio 0·6 mm. lata) ad medium inserta, basi antica truncato-rotundata, apice late acuminata acuta. *Lobulus oblongus*, folio subtriplo brevior, carina oblique adscendens, leviter arcuata, amplio sinu in folium excurrens, apice oblique truncato, angulo acuto, sub apice constrictus. *Amphigastria caulinia* maxima, caule triplo latiora, leviter sinuatim inserta, ad 2/3 emarginato-biloba, sinu recto obtuso, lobis late lanceolatis porrectis acutis. *Flores feminei* uno latere innovati. *Folia floralia* caulinis aequilonga, lanceolata, acuta, lobulo duplo breviore, linearis, breviter soluto, apice rotundato. *Amphigastrium florale* foliis floralibus parum brevius, lanceolatum, ultra medium emarginato-bifidum, rima angusta, laciniis anguste lanceolatis porrectis acutis.

Hab. Novae Hebridae (Aneityum): comm. Gunn, (Watts, 60).

Cheilolejeunea parvisaccata St., Tangoa, Santo: leg. Dr. Annand, 1909.

Cheilolejeunea Wattsiana St., n.sp.

Dioica pusilla flaccida, viridis, corticola, pulvinatim caespitans. *Caulis* ad 15 mm. longus, capillaceus, irregulariter denseque ramosus. *Folia caulinia* parum imbricata subrecte patula, valde decurva, in plano ovata, subsymmetrica apice obtusa, basi antica truncato-rotundata. *Cellulae* superae 18/18 μ trigonis nullis, basales 27/45 μ trigonis majusculis. *Lobulus* parvus, obovatus, folio quadruplo brevior, carina oblique adscendens, stricta, stricte in folium excurrens, apice oblique emarginatus, angulo acuto. *Amphigastria caulinia* majuscula, caule triplo latiora, transverse inserta, apice ad 1/3 emarginato-biloba, sinu subrecto, lobis triangulatis acutis. *Folia floralia* caulinis multo majora, spathulata (1·33 mm. longa, medio supero 0·67 mm. lata) apice obtusa; lobulus magnus, tertio brevior, anguste spathulatus ad 1/3 solutus, obtusus. *Amphigastrium florale* foliis floralibus aequilongum, oblongo-obconicum, ad 1/2 inciso-bifidum, rima angusta, laciniis lanceolatis acutis.

Hab. Lord Howe Island (Watts, 84).

Chiloscyphus argutus Nees. Tangoa Santo: leg. Dr. Annand, 1909.

Chiloscyphus cambewarranus St. Mount Wilson, N.S.W.: leg. Watts, 1911.

Chiloscyphus maximus St., n.sp.

Dioica magna robusta, flavo-virens, flaccida, corticola, laxe intricata. *Caulis* ad 4 cm. longus, simplex, parum longeque ramosus. *Folia caulinæ* parum imbricata, recte patula, leviter concava, in plano oblongo-conica, opposita (4·5 mm. longa, basi 4 mm. lata, apice 1·25 mm. lata) truncata, angulis spinula armatis, spinis divergentibus. *Cellulae* superae 36/36 μ , basales 45/72 μ trigonis nullis. *Amphigastria* caulinæ magna, caule quadruplo latiora, subquadrata, foliis utrinque late connata, apice profunde emarginato-quadratiseta, laciniis mediis porrectis, externis divergentibus. *Folia floralia* parva, obconica, 1 mm. longa, apice 0·67 mm. lata, irregulariter sexspinosa, spinis plus minus longis. *Amphigastrium florale* intimum foliis floralibus subaequilongum, oblongo-obconicum, apice ad medium quadrifidum, laciniis mediis longioribus, validis, externis setaceis, omnibus leviter divergentibus.

Hab. Australia (Etta's Glen, Black Spur, Vict.): Watts, 968.

Chiloscyphus montanus St., n.sp.

Dioica mediocris flaccida, dilute virens, corticola, dense depresso-caespitans. *Caulis* ad 2 cm. longus simplex vel sparsim longeque ramosus. *Folia caulinæ* contigua, recte patula, parum concava, in plano oblongo-conica (1·58 mm. longa, basi 1·17 mm. lata, apice 0·67 mm. lata) marginibus superis et inferis nudis substrictis, apice ad 1/3 emarginato-bifida, sinu recto, lobis triangulatis cuspidatis porrectis. *Cellulae* superae 18/36 μ , basales 27/54 μ trigonis magnis, cuticula levis. *Amphigastria* caulinæ magna, caule quadruplo latiora, late obconica, folio proximo breviter connata, ad 2/3 emarginato-bifida, sinu ampio, lobis anguste lanceolatis divergentibus, acutis. *Androecia* lateralia, bracteis quinquejugis.

Hab. Australia, (Neate's Glen, Blackheath): Watts, 927.

Chiloscyphus multifidus St. Mount Gower, Lord Howe Island: leg. Watts, August, 1911.

Cuspidatula monodon Hook. et Tayl. The Saddleback, Mount Gower, Lord Howe Island, leg. Watts, 1911.

Drepanolejeunea Riddleana St., n.sp.

Dioica exigua, pallide flavo-virens, flaccida, terricola, dense depresso-caespitans lateque expansa. *Caulis* ad 10 mm. longus, simplex vel parum longeque ramosus. *Folia caulina* remota, ex erecta basi recte patula, lanceolata longeque attenuata, apice setacea (0·58 mm. longa, 0·17 mm. lata) integerrima. *Cellulae superae* 18/18 μ , basales 18/27 μ trigonis nullis. *Lobulus maximus*, folio duplo brevior, anguste oblongus, triplo longior quam latus, erectus caulinque parallelus, carina papulosa bene arcuata, apice recte truncatus, angulo acuto, margine supero stricto, cauli subparallelo. *Amphigastria* caulina minuta, cauli aequilata, profundissime emarginato-bifida, laciniis erectis setaceis. *Perianthia* quoad plantae statram maxima, late pyriformia (0·83 mm. longa, medio 0·58 mm. lata) apice rotundata, rostro angusto, plicis posticis ad medium decurrentibus angustis, late divergentibus, omnibus integerrimis. *Folia floralia* perianthio parum breviora, lanceolata acuta, marginibus remote denticulatis, apice nudis; *lobulus* subduplo brevior, anguste lanceolatus, ad medium solutus, apice obtusus. *Amphigastrium florale* minimum, lobulo subdupo brevius, rectangulatum, sub apice utrinque brevidentatum, apice ad 1/3 emarginato-bifidum, segmentis setaceis. *Androecia* desunt.

Hab. Insulae Novae Hebridae (Epi): Riddle legit, Hb. Watts.

Eulejeunea flava Sw. Tangoa, Santo: leg. Dr. Annand, 1909.

Fimbriaria conocephala St. Newington Hospital Grounds, near Sydney.

Fimbriaria dioica St., n.sp.

Dioica minor, in rupibus gregarie crescens. *Frons* ad 15 mm. longa, simplex, validissima, antice sulcata, duplo latior quam crassa, grosse costata, costa valde producta, 3 mm. lata, 1·25 mm. crassa,

alae costam parum superantes, breviter attenuatae, stratum anticum hypoporum humile. *Squamae* posticae magnae, purpureae, appendiculo magno, subrotundo, integerrimo. *Pedunculus* capituli longissimus (3 cm.). *Capitula* alte conica, involucro breviusculo. *Perianthia* involucro plus duplo longiora longeque exserta, pallida. Reliqua desunt.

Hab. Australia, N.S. Wales (near Gladesville): Watts, 1095.

Fimbriaria subplana St. Pittwater Road, Sydney, N.S. Wales, and Lord Howe Island, (Northern Look-out).

Fimbriaria tasmanica St. Newington Hospital Grounds.

Fimbriaria Whiteleggei St. Newington Hospital Grounds, and Kingwell, Wyong.

Fossombronia Forsythii St. Newington Hospital Grounds near Sydney.

Fossombronia grossepapillata St., n.sp.

Dioica pusilla flaccida, flavo-rufescens, gregarie crescens, terricola. *Caulis* ad 12 mm. longus, simplex. *Folia caulinata conferta*, erecto-homomalla, latissima (3·5 mm. longa, 1·5 mm. lata) hic illic plicata, apice ampliata, rotundata integerrima, 2 mm. lata. *Cellulae superae* 36/36 μ , basales 54/90 μ trigonis nullis. *Perianthia* late obovato-obconica (3·5 mm. longa, medio 2·75 mm. lata) apice duplo angustiore quadriloba, lobis late triangulatis, porrectis acutis, sinubus amplis obtusis. *Folia floralia intima reniformia* 3·5 mm. longa, 4·5 mm. lata, inferne late obcuneata, apice late rotundata, regulariter multilobata, sinubus recurvis, lobis aequilongis acutis vel obtusis vel irregulariter repandis. *Sporae* 36 μ grosse papillatae brunneae.

Hab. Australia, (Young): Watts, 988.

Frullania asperifolia St., n.sp.

Sterilis flaccida, fusco-brunnea, corticola, dense depresso-caespitans, late expansa. *Caulis* ad 3 cm. longus, irregulariter bipinnatus. *Folia caulinata conferta*, oblique patula, canaliculatim concava, marginibus incurvis, in plano late ovato-elliptica (2 mm. longa, medio 1·4 mm. lata) apice rotundata, basi antica valde

ampliata, caulem late superantia, rotundato appendiculata. *Cellulae* superae $18/18\mu$ parietibus flexuosis, trigonis nodulosis, basales $18/36\mu$ trigonis maximis acutis, parietibus strictis, cuticula papillata. *Lobulus* majusculus, cauli aequilatus, cucullatus, vertice rotundatus, rostro longe producto obtuso, valido. *Amphigastria* caulina magna, in plano 1·17 mm. longa, medio 0·9 mm. lata, obovato-obcuneata, sinuatim inserta, apice breviter exciso-bidentata, dentibus late triangulatis acutis.

Hab. Australia, (Yarrangobilly Caves and Mount Wilson): Watts, 1093, etc.

Frullania Baileyana St. Centennial Glen, Blackheath, and Mount Wilson.

Frullania belmorensis St., n.sp.

Sterilis pusilla, rigidula, fusco-purpurea, corticola, dense depresso-caespitans lateque expansa. *Caulis* ad 2 cm. longus, regulariter breviterque pinnulatus, paucis ramis longioribus interjectis, similiter pinnulatis. *Folia* caulina imbricata, recte patula, valde concava, in plano late ovata (1·1 mm. longa, 0·75 mm. lata) basi antica ampliata, caulem late superantia ipsa basi rotundata. *Cellulae* superae $18/18\mu$ trigonis magnis, parietibus validis, basales $18/36\mu$, trigonis majusculis. *Lobulus* quoad plantae staturam maximus, cucullatus, subdupo longior quam latus, cauli subcontiguus et parallelus, vertice obtusus, ore truncato, sub ore constrictus. *Amphigastria* caulina majuscula, caule triplo latiora, transverse inserta, late obovato-obconica, superne utrinque angulata, apice ad 1/3 inciso-biloba, sinu recto, lobis triangulatis acutis porrectis.

Hab. Australia, (Belmore Falls): Watts, 931.

Frullania Billardieriana D. et M. Aneityum: Gunn, per Lillie, 1911.

Frullania cinnamomea Carr et Pears. Blackheath and Mount Wilson.

Frullania Crawfordii St. Base of Mount Lidgbird, Lord Howe Island: leg. Watts.

Frullania deflexa St. Aneityum: Gunn, per Lillie.

Frullania difficilis St. Mount Wilson, N. S. Wales.

Frullania excisula St., n.sp.

Sterilis magna gracilis flaccida, rufo-brunnea, corticola, dense depresso-caespitans. *Caulis* ad 5 cm. longus, inferne simpliciter denseque pinnulatus, superne longe ramosus, ramis 2 cm. longis, remote breviterque pinnatis. *Folia* caulina conferta, oblique patula, valde concava, in plano subrotunda (1·17 mm. longa et lata) basi optime cordatim ampliata, symmetrica, integra. *Cellulae* 18/18 μ trigonis parvis nodulosis, parietibus flexuosis, medio minute nodulosis, basales 27/36 μ trigonis magnis acutis, parietibus strictis. *Lobulus* majusculus, cauli aequilatus, cucullatus, erectus, cauli appressus, vertice rotundatus, ore truncato, rostro brevissimo, latiusculo obtuso, marginem lobuli vix attingente. *Amphigastria* caulina maxima, foliis subaequimagna, subrectangulata, sinuatim inserta (1 mm. longa, ubique 0·83 mm. lata) apice truncato-rotundata medioque minute exciso-bidentula.

Hab. Australia, N.S. Wales (Mount Wilson and Blackheath): Watts, 1030, 1071.

Frullania falciloba Tayl. Lord Howe Island and Mount Wilson, N. S. Wales.

Frullania falsa St. Lord Howe Island; Mount Wilson, and Wollondilly River, N.S. Wales, legit Watts.

Frullania filipendula St. Lord Howe Island (Northern Hills and Saddleback); also at Mount Wilson, N.S.W., Watts.

Frullania Forsythiana St. Denman Mountain and Yarrangobilly, N.S. Wales.

Frullania grossiloba St. Mount Wilson and Wyong, N.S.W.

Frullania howeana St., n.sp.; *F. grandifolia*, St., in sched.

Sterilis mediocris, olivacea, aetate fusco-brunnea, flaccida in latus plaga expansa, corticola. *Caulis* ad 5 cm. longus, dense longeque pinnatus, rarius bipinnatus. *Folia* caulina conferta,

recte patula, valde concava, apice arcte decurva, in plano ovato-elliptica, subsymmetrica (2·75 mm. longa, medio 2·25 mm. lata) apice late rotundata, antice caulem late superantia, basi antica circinatim appendiculata. *Cellulae* superae 18/18 μ trigonis nodulosis, parietibus flexuosis, basales 18/36 μ parietibus interrupte trabeculatis. *Lobulus* ovato-oblongus, a caule recte patens, duplo longior quam latus, vertice leviter arcuatus, ore in rostrum angustum truncatum excurrens. *Amphigastria* caulina reniformia (1·5 mm. lata, 1·1 mm. longa) transverse inserta, apice ad 1/3 emarginato-biloba, sinu amplissimo, segmentis triangulatis acutis, leviter conniventibus, marginibus ceterum ubique repandis varieque recurvis, subcrispatis.

Hab. Lord Howe Island, (Watts, 62).

Frullania immersa St. Aneityum: comm. Gunn, 1911
(Hb. Watts, 47^b 54).

Frullania minutistipula St., n.sp.

Sterilis pusilla, gracillima, flaccida, flavescens, aliis hepaticis corticolis consociata. *Caulis* ad 2 cm. longus, irregulariter brevi-terque pinnatus. *Folia caulina* remota, recte patula, valde concava, subconvoluta, in plano obovata (0·83 mm. longa, 0·58 mm. lata) apice late rotundata, basi ampliata, caulem late superantia, ipsa basi breviter rotundata. *Cellulae* foliorum superae 18/18 μ , basales 18/27 μ trigonis magnis, parietibus ubique validis. *Lobulus* magnus, folio duplo brevior, cylindricus, triplo longior quam latus, vertice obtusus, oblique patens, *stylus foliaceus*, lanceolatus, lobulo parum brevior. *Amphigastria* parva, transverse inserta, obovato-obconica, caule parum latiora, apice rotundata, minute inciso-biloba, sinu semirecto, lobis triangulatis acutis.

Hab. Australia, (Rodriguez Pass): Watts, 1001^b, 1001^c.

Frullania nodulosus Nees. Tangoa, Santo; leg. Dr. Annand 1909.

Frullania obtusifolia St. Eastern slope of Mount Lidgbird, Lord Howe Island: Watts, 1911.

Frullania pacifica Tayl. Futuna: Gunn, 1911.

Frullania pallida St. Aneityum: Gunn, per Lillie, 1911.

Frullania pentapleura Hook. et Tayl. The Pines and the Northern Hills, Lord Howe Island: Watts, 1911.

Frullania Powelliana St. Aneityum and Futuna: comm. Gunn, 1911 (Hb. Watts, 47^k, 75).

Frullania Rechingeri St. Futuna and Aneityum: Gunn, (Hb. Watts).

Frullania rubella Gotts. Mount Wilson, N.S. Wales, 1911.

Frullania seriata. Lord Howe Island (north and south):

Frullania Simmondsii St., n.sp.

Sterilis minor, flavo-rufescens, in cortice repens. *Caulis* ad 2 cm. longus, regulariter breviterque pinnulatus, pinnulis 3 mm. longis, simplicibus, rarius iterum pinnulatis. *Folia* caulina imbricata, subrecte patula, concava, in plano subrotunda (0·58 mm. longa et lata) antice caulem superantia, basi antica exappendiculata. *Cellulae* superae 18/18 μ trigonis parvis, basales 27/36 μ trigonis magnis. *Lobulus* majuscus, folio subdupo brevior, a caule remotus, cauli parallelus, obovato-oblongus, vertice obtusus, ore oblique truncato, crenulato. *Amphigastria* caulina majuscula, caule triplo latiora, late obtuse, ad medium inciso-biloba, sinu angusto, lobis oblique truncatis tridentatis.

Hab. Australia, (near Brisbane): Simmonds leg. (Watts, 1110).

Frullania squarrosa. Lord Howe Island (Northern Hills and Lookout): Watts, 1911.

Frullania Wattsiana St. Neates' Glen, Blackheath, N.S.W.

Frullania Wildii St. Lord Howe Island, north and south; also Denman Mountain, N.S.W.: leg. Watts.

Frullania Zippelii Sande. Aneityum: comm. Gunn, (Herb. Watts, 47^e).

Hygrolejeunea hebridensis St., n.sp.

Sterilis mediocris, pallide virens, flaccida, aliis hepaticis consociata. *Caulis* ad 3 cm. longus, parum longeque ramosus. *Folia*

caulina conferta, oblique patula, canaliculatim concava, apice arcte decurva, in plano late ovata (1·17 mm. longa, medio 0·83 mm. lata) brevi basi inserta, basi antica truncato-rotundata, caulem tegentia, apice subobtusa, marginibus ubique celluloso-crenulatis. *Cellulae* superae 27/27 μ , basales 36/45 μ trigonis parvis, parietibus tenuibus. *Lobulus* in situ majusculus, folio plus triplo brevior, carina sac-
catim rotundata, recto angulo in folium excurrentis, apice quam basis quadruplo angustiore, recte truncato, sub apice leviter con-
stricto. *Amphigastria* caulina magna, similiter crenulata, reni-
formia (0·75 mm. lata, 0·5 mm. longa) sinuatim inserta, apice ad
1/3 emarginato-biloba, sinu semirecto, lobis late triangulatis acutis.

Hab. Insulae Novae Hebridae (Tangoa, Santo): leg. Bowie (Watts, 20).

Isotachis Gunniana Mitt. Wentworth Falls, N.S.W.

Isotachis inflexa Gotts. Blackheath, N.S.W., 1911.

Isotachis terricola St., n.sp.

Sterilis minor rigidula, fusco-brunnea, apicibus dilutioribus, terricola, pulvinatim caespitans. *Caulis* ad 15 mm. longus, simplex vel furcatus. *Folia* caulina valde conferta oblique patula, canaliculatim concava, in plano subrotunda (2·5 mm. longa et lata) profunde sinuatim inserta, apice ad 1/3 inciso-biloba, sinu recto, lobis late triangulatis acutis porrectis, sub apice utrinque denticulo armatis. *Cellulae* superae 27/27 μ , basales 18/54 μ parietibus validis, cuticula striolata. *Amphigastria* caulina foliis minora (2·2 mm. longa et lata) late obtuse-angulata, apice ad 1/3 inciso biloba, sinu recto, lobis triangulatis, apiculatis divergentibus, sub apice utrinque unispina, supra basin utrinque denticulo armata.

Hab. Australia (Blackheath): Watts, 1016.

Jamesoniella ovifolia Schiffn. Aneityum: Gunn., per Lillie, 1911.

Lepidozia appressifolia St. Fitzroy Falls and Blackheath.

Lepidozia asymmetrica St. Wyong, Cambewarra and Blackheath N.S.W.

Lepidozia buffalona St., n.sp.

Sterilis exigua gracillima, pallide virens, subhyalina, terricola, dense intricata lateque expansa. *Caulis* ad 15 mm. longus, regulariter remoteque pinnulatus, pinnulis 3 mm. longis, recte patulis. *Folia* caulina remota, oblique vel subrecte patula, parum concava, in plano late obconica (0·5 mm. longa, basi 0·17 mm. lata, apice 0·5 mm. lata) symmetrica, apice ad medium quadrifida, sinubus obtusis, laciniis anguste lanceolatis, basi 2 cellulas latis, leviter divergentibus. *Cellulae* disci superae 27/27 μ , basales 27/45 μ parietibus validis. *Amphigastria* caulina parva, transverse inserta, caule parum latiora, apice profunde emarginato-quadrifida, laciniis angustis, setaceis divergentibus.

Hab. Australia, (Buffalo Creek, near Gladesville; Blue Mountains and Cambewarra): Watts, 977, 941, 978, 965, 982, 914, etc.

Lepidozia capilligera L.L. Rodriguez Pass and Wentworth Falls, Blue Mountains; and Lane Cove River, near Sydney, N.S.W.

Lepidozia centipes Tayl. Rodriguez Pass, Blue Mountains, N.S.W.

Lepidozia communis St., n.sp.

Sterilis exigua, pallide virens, terricola, dense caespitans lateque expansa. *Caulis* ad 8 mm. longus, regulariter remoteque pinnatus. *Folia* caulina remotiuscula, oblique patula, leviter decurva, in plano subquadrata (0·67 mm. longa, 0·54 mm. lata) discus basalis integer 0·33 mm. longus, apice quadrifidus, laciniis porrectis, anguste lanceolatis, basi 3 cellulas latis, apice setaceis. *Amphigastria* caulina parva, cauli aequilata, quadrata, ad medium quadrifida, laciniis porrectis, basi 2 cellulas latis.

Hab. Australia, (Grand Canyon, Blackheath): Watts, 1014.

Lepidozia crassitexta St., n.sp.

Sterilis magna gracilis flaccida, flavo-virens, aetate fusca, terricola, dense depresso-caespitans lateque expansa. *Caulis* ad 3 cm. longus, regulariter denseque pinnatus, pinnis ad 13 mm. longis, attenuatis, apice setaceis radicantibus. *Folia* caulina conferta,

oblique patula, valde decurva, in plano subquadrata (1·17 mm. longa, 1 mm. lata) lata basi inserta, basi antica rotundata, apice ad medium quadrifida, sinubus angustis, obtusis, laciniis leviter divergentibus, anguste lanceolatis attenuatis, basi 6–8 cellulas latis, laciniis superis brevioribus *i.e.* minus profunde solutis. *Cellulae superae* 27/27 μ , in disco 18/36 μ , basales 27/36 μ parietibus ubique crassis.

Hab. Australia, (Rodriguez Pass, Blackheath): Watts, 1005.

Lepidozia fila St. Aneityum, Gunn, 1911 (Hb. Watts, 42).

Lepidozia furcatifolia St., n.sp.

Sterilis parva gracillima rigida, flavo-rufescens, terricola, aliis hepaticis consociata. *Caulis* ad 2 cm. longus, sparsim remoteque ramosus, ramis saepe apice breviter furcatis, flagellis posticis sparsis longis nudis radicantibus. *Folia caulinata* imbricata, oblique patula, leviter decurva, in plano oblonga (0·83 mm. longa, 0·33 mm. lata) apice ad medium bifida, laciniis anguste lanceolatis, saepe inaequalibus, leviter divergentibus; discus basalis integer rectangulatus, basi antica rotundatus. *Cellulae superae* 18/27 μ basales 27/36 μ parietibus validis, marginales in facie externa grosse incrassatae. *Amphigastria caulinata* exigua, cauli aequilata et vix visibilia, reniformia, duplo latiora quam longa, apice breviter inciso-triloba, lobis latis acutis vel obtusis.

Hab. Australia, (Horse Shoe Falls, Blackheath): Watts, 1027.

Lepidozia Gunniana St., n.sp.

Sterilis minor, pallide flavicans, muscis consociata, rigida. *Caulis* ad 3 cm. longus, regulariter breviterque pinnatus, paucis ramis longioribus interjectis similiter pinnulatis. *Folia caulinata* remota (in ramis contigua) oblique patula, apice parum decurva, in plano subrectangulata (0·4 mm. longa, 0·3 mm. lata) symmetrica, apice breviter quadrifida, segmentis brevibus, mediis 4 cellulas longis, reliquis 2 cellulas longis, omnibus basi 2 cellulas latis. *Cellulae superae* 27/27 μ , basales 27/45 μ parietibus tenuibus, trigonis nullis. *Amphigastria caulinata* parva, cauli aequilata, optime

quadrata, apice breviter quadridentata, dentibus 2 cellulas longis, obtusis.

Hab. Insulae Novae Hebridae, (Aneityum): Gunn legit (Watts, 24).

Lepidozia hastatistipula St., n.sp.

Sterilis, minuta, rigida, fusco-brunnea, terricola, gregarie crescentes. *Caulis* ad 8 mm. longus, parum longeque ramosus. *Folia caulinata* remota, oblique patula, leviter decurva, in plano subrotunda (0·83 mm. longa, medio 0·9 mm. lata). *Discus basalis* integer obtuseatus (basi 0·25 mm. latus, apice 0·5 mm. latus) supra basin et sub apice utrinque unispinus, apice quadrifidus, laciniis 0·5 mm. longis, setaceis porrectis vel leviter divergentibus. *Cellulae superae* 18/27 μ basales 18/36 μ parietibus validis. *Amphigastria caulinata* magna, ambitu obovato-obconica, (0·83 mm. longa, 0·5 mm. lata) discus basalis integer obtuseatus, inferne nudus, superne utrinque unidentatus, apice regulariter quadrifidus, laciniis 0·33 mm. longis, anguste lanceolatis, superne setaceis.

Hab. Australia, (Healesville, Vict.): Watts, 966.

Lepidozia lateconica St., n.sp.

Sterilis exigua, omnium minima, fusco virens, in sicco subatra, aliis hepaticis terricolis consociata. *Caulis* ad 5 mm. longus, irregulariter longeque ramosus. *Folia caulinata* remota, recte patula, erecto-homomalla, parum concava, in plano late obconica (0·6 mm. longa, 0·33 mm. lata) apice attenuata, acuta, medio utrinque grosse lobata, lobis oblique patulis, lanceolatis, 0·17 mm. longis. *Cellulae* ubique 18/36 μ , trigonis nullis. *Amphigastria caulinata* exigua, cauli aequilata, vix visibilia, subquadrata, limbo basali integro brevissimo, lineari, apice remote trifida, laciniis setaceis, sinibus latis.

Hab. Australia, (Barron Falls, North Queensland; leg. Mrs. Brotherton) Watts, 976.

Lepidozia Lindenbergii Gotts. Mount Gower, Lord Howe Island, Watts, 1911.

Lepidozia longiscypha Tayl. Buffalo Creek, near Sydney; Centennial Glen, Blackheath; Cambewarra Mountain, N.S. Wales.

Lepidozia microstipula St., n.sp.

Sterilis exigua, fusco-virens, flaccida, terricola, late expansa. *Caulis* ad 7 mm. longus, parum longeque ramosus, capillaceus. *Folia caulina* remota vel contigua, oblique patula, parum concava, in plano 0·58 mm. longa, 0·67 mm. lata, sinuatim inserta; *disco basali* integro 0·2 mm. longo, 0·5 mm. lato, late obconico, apice longe quadrifida, *laciniis* lanceolatis, 0·33 mm. longis, acutis, mediis porrectis, lateralibus oblique patulis, sinubus obtusis, basi 4 cellulas latis. *Cellulae* superae 18/18 μ basales 18/27 μ trigonis nullis. *Amphigastria* caulina minima, ambitu obovato-obconica, ad medium emarginato-bifida, sinu ampio, *laciniis* capillaceis, *disco basali* tres cellulas longo et lato, obconico.

Hab. Australia, (Lane Cove River, above Fig Tree Bridge) : Watts, 958.

Lepidozia multifida St., n.sp.

Dioica magna robusta flaccida, pallide virens, corticola dense depresso-caespitans. *Caulis* ad 4 cm. longus, validus dense brevi-terque pinnatus, pinnis saepe flagellatim attenuatis. *Folia* caulina imbricata, oblique patula, decurva, in plano subrotunda (1·5 mm. lata, 1·33 mm. longa) asymmetrica, ubique grosse armata, margine supero 5 spinoso, spinis parum patulis, margine infero quadrifido, *laciniis* profunde solutis, aequilongis plus minus validis, omnibus apice longius setaceis. *Cellulae* superae 18/18 μ , mediae 18/27 μ , basales 18/45 μ , parietibus crassis, cuticula levis. *Amphigastria* caulina foliis aequimagna, ambitu subrotunda, circumcirca profunde sexfida, *laciniis* inaequalibus, setaceis vel lanceolatis, saepe profunde bifidis vel trifidis, segmentis angustis, apice semper longe setaceis. *Perianthia* cylindrica, 5 mm. longa, sub apice plicata, ore parvo truncato breviter fisso, segmentis plus minus longe spinulosis. *Folia floralia* intima oblongo-elliptica (2·5 mm. longa, medio 1·5 mm. lata) apice late rotundata, marginibus inferis nudis, superis

irregulariter denticulatis. *Amphigastrium florale* intimum foliis floralibus subaequale, apice quidem truncatum breviter dentatum.

Hab. Australia, New South Wales (Blue Mountains): Watts, 974, 975, 964.

Lepidozia nova St., n.sp.

Sterilis magna gracilis flaccida, pallide virens, dense depresso-caespitans, terricola. *Caulis* ad 4 cm. longus, regulariter breviterque pinnatus, pinnis 3 mm. longis, subrecte patulis, simplicibus, frondem linearem formantibus. *Folia caulina* parum imbricata, recte patula, decurvula, in plano late triangulata (basi 1·33 mm. lata, 1·33 mm. longa) apice fere ad medium usque inciso-biloba, sinu subrecto, laciniis e lata basi longe attenuatis, 0·67 mm. longis, marginibus reliquis maxime irregularibus, varie incisis sublaceratis, setis plus minus validis, minutis vel longioribus vel longissimis mixtis. *Cellulae superae* 18/18 μ , basales 36/36 μ trigonis nullis. *Amphigastria caulina* foliis parum minora, ambitu 1 mm. longa et lata, laciniis primariis 4 validis, utrinque longa seta armatis.

Hab. Australia, (Blue Mountains and Mount Wilson): Watts, 1033, 1054 and 1066.

Lepidozia Oldfieldiana St. Horseshoe Falls, Blackheath, and Kingwell, Wyong, N.S.W.

Lepidozia quadriseta St. Horseshoe Falls, Blackheath, N.S. Wales.

Lepidozia quadrifistipula St., n.sp.

Sterilis pusilla gracillima, pallide virens, terricola, dense depresso-caespitans. *Caulis* ad 12 mm. longus, regulariter breviterque pinnatus, pinnulis 3 mm. longis, recte patulis. *Folia caulina* contigua, subrecte patula, parum concava, in plano late obconica (0·58 mm. longa, basi 0·25 mm. lata, apice 0·5 mm. lata); discus basalis integer 0·25 mm. longus, apice quadrifidus, laciniis 0·33 mm. longis, anguste lanceolatis, basi 4 cellulas latis, leviter divergentibus. *Cellulae superae* 18/27 μ , basales 27/36 μ , trigonis nullis. *Amphigastria caulina* exigua, cauli aequilata, in plano optime quadrata,

apice ad 1/3 emarginato-quadrifida, laciniis setaceis, 2 cellulas longis, porrectis.

Hab. Australia, (Rotunda, Neate's Glen, Blackheath): Watts, 1009.

Lepidozia rigida St., n.sp. Aneityum: Gunn, per Lillie, also Hb. Watts, 36.

Lepidozia septemfida St. Water Nymph's Dell, Wentworth Falls. N.S.W.

Lepidozia tenera St. Futuna: Gunn, 1911 (Hb. Watts, 82).

Lepidozia terricola St. Belmore Falls, N.S.W.

Lepidozia trichodes Ldbg. Aneityum: Gunn, 1911, (Hb. Watts, 47^b.)

Lepidozia tripilosa St., n.sp.

Sterilis, minor, gracilis flaccida, pallide virens vel subhyalina. *Caulis* ad 15 mm. longus, capillaceus, sparsim breviterque pinnatus, flagellis posticis numerosis. *Folia caulina* contigua, recte patula, plano-disticha, subrectangulata (0·75 mm. longa, ubique 0·33 mm. lata) lata basi inserta, disco basali integro subquadrato, apice leviter oblique truncato, trifido, rarius quadrifido, sinibus angustis acutis, laciniis setaceis, basi 2 cellulas latis subaequilongis. *Cellulae* superae 36/36 μ , basales 36/54 μ parietibus validis, trigonis nullis. *Amphigastria* parva, disco basali integro unam cellulam longo, sex cellulas lato, apice trifido, laciniis setaceis, 0·25 mm. longis, late divergentibus.

Hab. Australia, (Centennial Glen, Blackheath): Watts, 1043.

Lepidozia ulothrix Ldbg. Katoomba Falls; Mount Wilson and Rodriguez Pass, Blue Mountains, N.S.W.

Lepidozia verticillata Carr. Valley of Waters and Centennial Glen, N.S.W.

Lepidozia Wattsiana St. Stanwell Park, N.S.W.

Lepidozia Weymouthiana St., n.sp.

Sterilis magna flaccida, pallide virens, corticola, laxe intricata. *Caulis* ad 4 cm. longus, carnosus, regulariter denseque pinnatus, pinnis 7 mm. longis, decurvo homomallis. *Folia* caulinata imbricata, oblique patula, leviter concava, in plano 1·5 mm. lata et longa, asymmetrica, margine supero arcuato, 1·67 mm. longo, basi rotundato, margine infero 0·9 mm. longo, stricto, basi truncato, disco basali integro oblique truncato, apice quadrifido, laciniis inaequalibus, superis 0·33 mm. longis, inferis 0·5 mm. longis, omnibus basi 7 cellulas latis. *Cellulae* foliorum superae 18/18 μ , basales 27/45 μ , parietibus crassis. *Amphigastria* caulinata quadrata (0·9 mm. longa et lata) ad medium quadrifida, laciniis anguste lanceolatis obtusis, porrectis, sinibus obtusis.

Hab. Tasmania, (Weymouth, 1168^b.)

Lophocolea allodontata H. et T. Erskine Valley, Lord Howe Island, (Watts).

Lophocolea belmorana St., n.sp.

Sterilis minor rigidula, brunnea, apicibus pallidis, virescentibus, terricola, dense depresso caespitosus lateque expansa. *Caulis* ad 2 cm. longus, capillaceus, simplex vel parum longeque ramosus. *Folia* caulinata conferta, subopposita, erecto-homomalla, concava, in plano late ovata vel subrhombica (1·17 mm. longa, 1 mm. lata) oblique patula, apice late truncato-rotundata, integerrima. *Cellulae* superae 36/36 μ trigonis magnis, basales 36/45 μ trigonis parvis. *Amphigastria* caulinata majuscula, caule duplo latiora, foliis utrinque breviter connata; disco basali integro subquadrato, utrinque bispinuloso, apice ad medium emarginato-bifido, sinu ampio, laciniis lanceolatis angustis cuspidatis leviter divergentibus.

Hab. Australia, (Belmore Falls): Watts, 934.

Lophocolea Bowiena St., n.sp.

Sterilis magna flaccida, dilute flavicans vel virescens, in humo late expansa. *Caulis* ad 5 cm. longus, validus, simplex, rarius ramulo auctus. *Folia* caulinata imbricata, symmetrica, recte patula, plano-disticha (2·5 mm. longa, basi 1·75 mm. lata, apice truncata

0·75 mm. lata) optime oblongo-conica, apice utrinque spina armata, spinis divergentibus. *Cellulae* superae 18/27 μ , basales 36/36 μ parietibus validis. *Amphigastria caulina* parva, caule parum latiora, folio proximo breviter connata; disco humili utrinque unispino, apice emarginato-bifido, laciniis longis, late divergentibus.

Hab. Insulae Novae Hebridae, (Santo) Bowie leg. (Watts, 15).

Lophocolea excisifolia St., n.sp.

Sterilis pallide flavicans vel subhyalina, flaccida, tenerrima, aliis hepaticis consociata. *Caulis* ad 25 mm. longus, capillaceus, pallidus, simplex vel parum longeque ramosus. *Folia caulina* contigua, oblique vel subrecte patula, parum concava, in plano late ovata, trigona (basi 3·25 mm. lata, 3 mm. longa) asymmetrica, margine supero longe arcuato, infero stricto breviore, apice 1·5 mm. lata, oblique emarginata, angulis breviter lateque acuminatis. *Cellulae* superae 36/36 μ basales 36/54 μ trigonis nullis. *Amphigastria caulina* majuscula, breviter obtusecuneata, apice emarginato-bifida, laciniis longe lanceolatis, validis (1 mm. longis) late divergentibus, supra basin utrinque spinula armatis.

Hab. Australia, (Yarrangobilly Caves): Watts, 924^a.

Lophocolea heterophylloides Nees. Lord Howe Island (north and south), Watts, 1911.

Lophocolea Howeana St., n.sp.

Dioica minor flaccida, pallide virens, in cortice laxe caespitans. *Caulis* ad 2 cm. longus, sparsim longeque ramosus. *Folia caulina* contigua, recte patula, plana, late conica, symmetrica (1·5 mm. longa, basi 1·75 mm. lata, sub apice 0·75 mm. lata, apice ipso emarginato-bispinoso, spinis e lata basi attenuatis divergentibus. *Cellulae* superae 27/27 μ , basales 27/45 μ parietibus validis. *Amphigastria caulina* majuscula, caule triplo latiora, disco basali integro humillimo, utrinque grosse spinoso, apice late emarginato-bispinoso, spinis simillimis. *Perianthia magna*, obovato-oblonga, (6·5 mm. longa, 3 mm. lata) apice profunde trilobata, lobis iterum grosse bifidis, laciniis irregulariter longeque spinosis et setaceis. *Folia floralia* intima parva, obovata, valde concava, squarrose

patula, perianthio plus duplo breviora, apice breviter emarginato-biloba, lobis triangulatis acutis. *Amphigastrium florale* intimum foliis floralibus aequimagnum, simillimum, similiter concavum. *Androecia* desunt.

Hab. Australia, (Lord Howe Island : Watts 39).

Lophocolea Oldfieldiana St. Western base of Mount Lidgbird and on Mount Gower, Lord Howe Island : Watts, 1911.

Lophocolea subemarginata Taylor. Buffalo Gully near Gladesville, N. S. Wales.

Lophocolea trialata G. Rodriguez Pass, N.S.W.

Lophocolea varians St., n.sp.

Sterilis mediocris rigidula, dilute brunnea, terricola, dense depresso caespitans lateque expansa. *Caulis* ad 3 cm. longus, capillaceus, simplex vel parum longeque ramosus. *Folia caulina* alternantia, imbricata, recte patula, subquadrata (2 mm. longa, 1·75 mm. lata) normaliter apice truncata, angulis apiculatis ; ad-sunt folia maxime aberrantia, id est: folia apice integerrima, alia in medio apicali unidentata vel truncata, angulis apiculatis vel tridenticulata vel apice late triangulata angulis apiculatis vel apice heteroformia sublacerata. *Cellulae* superae 18/18 μ , basales 27/27 μ trigonis nullis, parietibus validis. *Amphigastria* caulina parva, cauli aequilata, subquadrata, foliis utrinque anguste connata, apice emarginato-bifida, sinu levissimo, laciis setaceis, late divergentibus, sub apice utrinque spinula patula armata.

Hab. Australia, (Ferny Hill, Mount Wilson): Watts, 1080.

Madotheca hebridensis St., n.sp.

Dioica maxima gracilis, intense viridis, flaccida, in rupibus humidis pendula. *Caulis* ad 13 cm. longus, remote breviterque ramosus, ramis 10 – 25 mm. longis. *Folia caulina* conferta, recte patula, undulata, in plano late ovato-elliptica (2 mm. longa, medio 1·33 mm. lata) asymmetrica, margine supero longe arcuato, infero stricto, brevi basi inserta, apice rotundata integerrima. *Cellulae*

superae 18/18 μ , basales 27/36 μ , trigonis parvis, superne nullis. *Lobulus magnus*, late lingulatus (1 mm. longus, 0·67 mm. latus) apice rotundatus, integerrimus. *Amphigastria* caulina subquadrata (1·1 mm. longa, 0·9 mm. lata) apice truncato-rotundata, profunde sinuatim inserta, marginibus ubique arcte recurvis. *Folia floralia* intima ex angusta basi obovata (2·5 mm. longa, medio 1 mm. lata) apice obtusa; superne irregulariter breviterque pilosa, inferne nuda; *lobulus* ovato-oblongus, profunde solutus, apice late truncatus, marginibus dense irregulariterque spinosis et dentatis. *Amphigastrium florale intimum* obovato-oblongum, lobulo parum majus, ceterum subaequale similiterque armatum.

Hab. Insulae Novae Hebridae, (Futuna) Gunn legit: (Watts, 66, 76).

Madotheca queenslandica St. Northern Look-out, Lord Howe Island: Watts.

Madotheca Stangeri L. et G. At many places on Lord Howe Island: Watts, 1911.

Marchantia paludicola St., n.sp. *M. conica*, St. in sched.

Dioica, mediocris tenax, viridis, aetate rufescens, paludicola. *Frons* ad 3 cm. longa, 1 mm. lata, simplex, rarius brevi ramulo aucta. *Costa* humilis sed latissima, in sectione transversa anguste linearis (5 mm. lata, 0·75 mm. crassa; stomata creberrima, ore interno 4 cellulis angustis circumdato. *Squamae* porticae magnae, purpureae, appendiculo integro subrotundo (0·8 mm. longo et lato). *Capitula* feminea hemisphaerica, centro antico valide apiculato, margine breviter crenata, quinquelobata, lobis rotundatis. *Involucra* ore dense longeque lacerata. *Capitula mascula* rotunda, majora, disciformia, alveolis masculis radiatim insertis, radiis leviter prominulis, margine disci itaque crenato.

Hab. Australia, New South Wales, (Cambewarra): Watts, 1106, 1102.

This plant was named *Marchantia conica*; as this denomination had been used before, the name has been changed.

Marsupidium rigidum St., n.sp. Mount Gower, Lord Howe Island: Watts, 1911. A few scraps only; description wanting.

Mastigobryum aneityense St., n.sp.

Sterilis mediocris, pallide flavo-virens, rigidula. *Caulis* ad 3 cm. longus, parum longeque ramosus. *Folia caulinata* conferta, falcatim patula, canaliculatim concava, in plano anguste linearis (3·5 mm. longa, supra basin 1 mm. lata, superne 0·67 mm. lata) basi antica rotundata, apice paucidentata, dentibus triangulatis, acutis, valde heteroformis varieque patulis, interdum sublaceratis. *Cellulae* superae 27/36 μ , basales 36/54 μ trigonis majusculis. *Amphigastria* caulinata majuscula, caule parum latiora, quadrata marginibus ubique crenatim incisis.

Hab. Insulae Novae Hebridae (Aneityum): Gunn leg. (Watts, 47¹, 34).

Mastigobryum asperum St., n.sp.

Sterilis major gracilis olivacea, terricola, laxe intricata. *Caulis* ad 5 cm. longus, repetito-furcatus, ramis primariis 2 cm. longis, ultimis brevibus, flagellis longis numerosis. *Folia caulinata* contigua, decurvo-homomalla, in plano anguste lingulata, leviter falcata (2 mm. longa, ubique 0·75 mm. lata) margine infero nudo, supero minute denseque crenulato, apice breviter valideque tridentata, dentibus late triangulatis, sparsim crenulatis, acutis. *Cellulae* superae 14/14 μ , basales 18/36 μ trigonis nullis. *Amphigastria* caulinata magna, rectangularia, (0·75 mm. longa, 0·58 mm. lata) marginibus ubique repandis, hic illic breviter lobatis, minute crenulatis, suberosis.

Hab. Insulae Novae Hebridae (Tangoa, Santo). Bowie legit: (Watts, 12).

Mastigobryum Baileyanum St. Mount Gower, Lord Howe Island: Watts, 1911.

Mastigobryum caudistipulum St. Tangoa, Santo: Bowie, 1909, (Hb. Watts, 11).

Mastigobryum conistipulum St. Aneityum: Gunn, per Lillie.

Mastigobryum Corbieri St., n.sp.

Sterilis mediocris rigida, flavescent, terricola, in latus plaga expansa, spongiosa caespitans. *Caulis* ad 3 cm. longus, furcatus et repetito-furcatus, flagellis sparsis remote seriatis. *Folia* caulina conferta, recte patula, valde decurva, in plano late ovato-trigona (2·5 mm. longa, apice 1 mm. lata, supra basin 2 mm. lata) asymmetrica, margine supero e basi rotundata substricto, inferne leviter sinuato, apice quam basis duplo angustiore, oblique truncato, emarginato-tridentato, sinibus parum profundis, dentibus brevibus latis acutis. *Cellulae* superae 18/27 μ , basales 27/45 μ vel 27/54 μ trigonis majusculis. *Amphigastria* caulina aequilata, squarrose patula, in plano late rectangulata (0·83 mm. lata, 0·5 mm. longa) marginibus ubique irregulariter obtuseque dentatis et erosis.

Hab. Australia, (Kingwell, Wyong): Watts, 971^b.

Mastigobryum dentistipulum St., n.sp.

Sterilis mediocris flavescent, aetate virens, valida, rigidula. *Caulis* ad 2 cm. longus, parum longeque ramosus, flagellis sparsis breviusculis. *Folia* caulina opposita, conferta, recte patula, parum concava, in plano oblonga (2·17 mm. longa, supra basin 1·25 mm. lata) subsymmetrica, apice oblique truncata (0·67 mm. lata) emarginato tridentata, dentibus angustis, sub apice regulariter minuteque denticulata, basi utrinque rotundata. *Cellulae* superae 27/27 μ trigonis majusculis, parietibus validis, basales 36/54 μ trigonis magnis, acutis, parietibus tenuibus. *Amphigastria* caulina foliis utrinque late connata, subrectangularia (0·9 mm. lata, 0·67 mm. longa) marginibus irregulariter breviterque inciso-lobatis, lobulis irregularibus, acutis vel obtusis, interdum sublaceratis.

Hab. Australia, New South Wales (Lane Cove River and Valley of Waters): Watts. 1096, 1129, 1104.

Mastigobryum erosifolium St., n.sp.

Sterilis parva rigidula, dilute brunnea, terricola, pulvinatim caespitans lateque expansa. *Caulis* ad 15 mm. longus, capillaceus,

fuscus, repetito furcatus, flagellis sparsis. *Folia caulinata conferta*, decurvo-homomalla, valde concava, in plano ovato-oblonga (1·5 mm. longa, 0·83 mm. lata) asymmetrica, margine supero longe brevi-terque arcuato, infero stricto, apice ad 1/3 inciso-biloba sinu angusto, laciniis porrectis valde inaequalibus, supero parum longiore, triplo latiore, marginibus repandis, suberosis. *Cellulae superae* 18/18 μ , basales 27/27 μ trigonis subnullis. *Amphigastria caulinata parva*, cauli aequilata, in plano 0·33 mm. longa et lata, ad medium inciso-triloba, sinibus angustis, lobis ligulatis obtusis.

Hab. Australia, (Cambewarra Mountain): Watts legit, 917.

Mastigobryum fasciculatum St. Mount Gower, Lord Howe Island : Watts, 1911.

Mastigobryum gracillimum St., n.sp.

Sterilis major flaccida, intense viridis. *Caulis* ad 4 cm. longus, sparsim longeque ramosus, flagellis breviusculis sparsis. *Folia caulinata conferta*, oblique patula, decurvula, in plano oblonga (2·33 mm. longa, basi 1·5 mm. lata) symmetrica, apice truncata, 0·5 mm. lata, emarginato-tridentata, dentibus majusculis paucis, minimis interjectis, sub apice similiter denticulata, basi utrinque rotundata. *Cellulae superae* 18/18 μ parietibus validis, basales 27/45 μ trigonis majusculis. *Amphigastria caulinata magna*, latiora quam longa, rectangulata, (1·33 mm. lata, 0·83 mm. longa) dense valideque dentata, haud raro duplicatim dentata.

Hab. Australia, New South Wales, (Wyong, and Valley of Waters): Watts, 939, 987.

Mastigobryum Gunnianum St., n.sp.

Sterilis, mediocris, intense flavicans, rigida. *Caulis* ad 3 cm. longus, parum longeque ramosus, flagellis brevibus numerosis. *Folia caulinata conferta*, recte patula, canaliculatim concava, margine infero arte incurvo, in plano oblonga (1·75 mm. longa, supra basin 0·83 mm. lata) asymmetrica, margine infero substricto, supero et basi late rotundata substricto, apice truncata (0·5 mm. lata) emarginato-tridentata, dentibus validis, triangulatis, divergentibus acutis. *Cellulae superae* 18/18 μ parietibus validis, basales 27/45 μ

trigonis majusculis, acutis. *Amphigastria* caulinata magna, rectangularis, transverse inserta (0·83 mm. longa, 0·58 mm. lata) marginibus ubique repandis, apice irregulariter minuteque dentatis.

Hab. Insulae Novae Hebridae (Aneityum and Futuna): Gunn leg. (Watts, 46, 67, 69, etc.)

Mastigobryum hebridense St., n.sp.

Sterilis magna robusta rigida, dilute olivacea, corticola. *Caulis* ad 5 cm. longus, parum longeque ramosus, validus. *Folia* caulinata imbricata, recte patula, canalicularim concava, in plano anguste ligulata, leviter falcata (4 mm. longa, supra basin 0·5 mm. lata) apice oblique truncata, emarginato-triloba, lobis late triangulatis, acutis, sparsim minuteque dentatis. *Amphigastria* caulinata magna, caule triplo latiora, subquadrata, sinuatim inserta, marginibus regulariter breviterque repandis. *Cellulae* superae foliorum 27/27 μ trigonis majusculis acutis, basales 36/54 μ trigonis maximis subnodulosis.

Hab. Insulae Novae Hebridae (Aneityum): Gunn leg. (Watts, 59).

Mastigobryum indigenarum St., n.sp.

Sterilis mediocris flaccida, dilute flavo-virens. *Caulis* ad 4 cm. longus, regulariter breviterque pinnatus, ramis longioribus interjectis similiter pinnatis, flagellis brevibus, sparsis. *Folia* caulinata imbricata, oblique patula, parum concava, in plano ligulata (1·33 mm. longa, ubique 0·5 mm. lata) leviter falcata, apice emarginato-trifida, laciniis angustis porrectis aequalibus, sub apice minute crenulata. *Cellulae* superae 13/13 μ parietibus validis, in vitta 27/36 μ trigonis majusculis. *Amphigastria* caulinata parva, cauli aequilata, subquadrata, apice longe angusteque setacea, setis disco subaequilongis, porrectis sub apice utrinque denticulata.

Hab. Insulae Novae Hebridae (Aneityum): Gunn com. (Watts, 73.)

Mastigobryum luzonense St. Aneityum: Gunn, (Hb. Watts, 53.)

Mastigolejeunea acutifolia St., n.sp.

Sterilis major flaccida, rufescens, in cortice laxe caespitans, longe prostrata. *Caulis* ad 5 cm. longus parum longeque ramosus. *Folia* caulina parum imbricata, subrecte patula, canaliculatim concava, in plano oblonga (2·75 mm. longa, medio 1·1 mm. lata) integerrima, apice minute apiculata, marginibus longe arcuatis, basi antica rotundata.. *Cellulae* superae 18/18 μ basales 18/54 μ , in vitta 14/36 μ , parietibus validis, trigonis nullis, *lobulus* majusculus, oblongus, duplo longior quam latus, carina substricta, stricte in folium excurrens, margine supero longe arcuato, apice quam basis triplo angustior, excisus, angulo spina longa hamata armato. *Amphigastria* caulina magna, circularia, 1 mm. longa et lata, integerrima.

Hab. Insulae Novae Hebridae (Santo: Bowie leg.; Aneityum: Gunn leg.) Watts, 13, 25^a, 33.

Mastigolejeuna Wattsiana St. Intermediate Hill, etc., Lord Howe Island: leg. Watts, 1911.

Mastigophora diclados Endl. Aneityum and Futuna: Gunn (Hb. Watts, 47^d and 74).

Mastigophora tenuis St., n.sp.

Sterilis, magna, gracilis flaccida, dilute rufo-brunnea, corticola, laxe intricata et pendula. *Caulis* ad 8 cm. longus, dense longeque ramosus, ramis trunco aequivalidis, 25 mm. longis, vulgo homomallis, supra basin furcatis. *Folia* caulina dense imbricata, valde concava, in plano 1·4 mm. longa, 1·1 mm. lata, profunde sinuatim inserta, basi utrinque spina armata, spinis validis, lanceolatis, hamatum recurvis, apice profunde triloba, lobis inaequalibus, *supero* maximo, late lanceolato (0·83 mm. longo basi 0·58 mm. lato), lobulo *medio* parum breviore triplo angustiore, lobulo *tertio* (infero) iterum angustiore et parum breviore. *Cellulae* foliorum superae 36/36 μ trigonis giganteis, saepe confluentibus, medio 36/54 μ basales 36/72 μ parietibus minus validis. *Amphigastria* caulina magna, sinuatim inserta, 1 mm. longa, apice ad 2/3 bifida, sinu angusto obtuso, laciniis anguste lancolatis, cuspidatis porrectis vel divergentibus,

basi utrinque hastatim lobata, lobi lanceolati, apicalibus subaequimagni simillimi, recte patuli, in plano recurvi.

Hab. Novae Hebridae (Aneityum): Gunn legit (Watts, 38).

Metzgeria antarctica St. Centennial Glen, Blackheath, N. S. Wales.

Metzgeria atrichoneura St. Etta's Glen, Black Spur, Victoria: Watts, 1906; The Jungle, Blackheath, N.S.W., 1911.

Metzgeria comata St. Aneityum: Gunn per Lillie, 1911.

Metzgeria glaberrima St. Cambewarra Mountain and Leura, N. S. Wales.

Metzgeria Howeana St., n.sp.

Sterilis minor subhyalina vel leviter flavicans, debilis, corticola, dense depresso caespitans. *Frons* ad 15 mm. longa, subplana 3.5 mm. lata, plano-disticha, *alis* 8–10 cellulas latis, utrinque nudis, marginibus quidem longe dense setulosis, setulis solitariis, simpliciter seriatis dense consecutivis, decurvis. *Costa* angusta, nuda, cellulis corticalibus utrinque biseriatis. *Cellulae* alarum marginales 27/36 μ , submarginales 36/36 μ , ad costam 36/54 μ , trigonis subnullis.

Hab. Australia, Mount Wilson and Wyong: Watts legit, 1065.

Metzgeria longipila St., n.sp.

Dioica magna gracillima flaccida, pallide flavo-virens, muscis consociata. *Frons* ad 7 cm. longa, irregulariter ramosa, ramis primariis ad 3 cm. longis, apice breviter furcatis, inferne sparsim breviterque pinnatis, paucis ramis basalibus e latere costae ortis, minute pinnatis, pinnulis iterum lateralibus. *Costa* angusta, in sectione transversa subrotunda, antice et postice 2 cellulis tecta, postice sparsim longeque pilosa. *Alae* valde decurvae, in plano 1 mm. latae, postice sparsim setulosae, marginibus dense pilosis, pilis geminatis, oppositis, divergentibus hamatis. *Cellulae* alarum marginales 27/54 μ , submarginales 36/36 μ , ad costam 54/54 μ . *Rami* feminei reniformes, marginibus longissime setosis.

Hab. Insulae Novae Hebridae (Aneityum): Gunn comm. (Watts, 60^a.)

Metzgeria nitida Mitt. Mount Lidgbird, Mount Gower,
and Saddleback, Lord Howe Island: Watts, 1911.

Metzgeria pauciseta St., n.sp.

Dioica, longissima, gracillima flaccida, flavicans, terricola, dense depresso caespitans lateque expansa. *Frons* ad 4 cm. longa, 1 mm. lata, irregulariter pinnata et bipinnata, nusquam furcata, semper e latere costae ramosa vel ex apice ramorum innovata, planta itaque maxime articulata, articulis 4 – 7 mm. longis. *Costa* angustissima in sectione transversa subrotunda, antice et postice 2 cellulis tecta, postice nuda; *alae* planae, nudae, marginibus quidem sparsim setulosae, setulis simplicibus, strictis. *Cellulae* alarum $36/36\mu$, ad costam $54/54\mu$. *Rami* *feminei* obcordati, marginibus dense longeque setulosi.

Hab. Insulae Novae Hebridae (Aneityum): Gunn legit (Watts 47^c.)

Pallavicinius campanulatus St., n.sp.

Dioica mediocris, pallide virens, rigidula, terricola, dense depresso caespitans. *Frons* ad 2 cm. longa, 5 mm. lata, integerrima, simplex vel e costa innovans. *Involucra* campanulata, e latere costae orta, profundissime trifida, laciniis lanceolatis, irregulariter piliferis sublaceratis. Reliqua desunt.

Hab. Australia, New South Wales, (Valley of Waters): Watts legit, 1111.

Pallavicinius Ridleyi St. Aneityum: Gunn, 1911 (Hb. Watts, 58). *

Physocoleus casuarinae St. On tree, Gladesville Hospital, Sydney, N. S. Wales.

Plagiochila aneitiiana St., n.sp.

Sterilis major rigidula, flavo-rufescens, in cortice dense depresso caespitans. *Caulis* ad 5 cm. longus, simplex, rarissime ex apice furcatus. *Folia* *caulina* contigua, oblique patula, valde concava leviterque decurva, in plano ovato-trigona (3·5 mm. longa, medio 2·5 mm. lata) basi utrinque longius decurrentia, asymmetrica, margine *supero* late rotundato, regulariter denticulato, inferne

nudo, margine *infero* substricto nudo, apice quam basis subtriplo angustiore, breviter 3–4 dentato. *Cellulae superae* 27/27 μ , basales 27/63 μ , trigonis magnis, parietibus validis.

Hab. Insulae Novae Hebridae (Aneityum): Gunn legit (Watts, 47^a.)

Plagiochila ciliata Gotts. Tangoa, Santo: Annand, 1909, (Hb. Watts, 7.)

Plagiochila Ferdinandi Muelleri St. Northern Lookout and Mount Gower, Lord Howe Island: Watts, 1911.

Plagiochila fruticella Tayl. Northern Lookout, Lord Howe Island: Watts, 1911.

Plagiochila Gunniana St., n.sp. Aneityum: Gunn, per Lillie.

Plagiochila hebridensis St., n.sp.

Dioica magna robusta flaccida, intense viridis, in rupibus humidis dense depresso-caespitans. *Caulis* ad 11 cm. longus, simplex vel parum longeque ramosus. *Folia caulina contigua*, oblique patula, parum concava, in plano anguste oblonga, (4·5 mm. longa, medio 2 mm. lata) symmetrica, margine *supero* leviter arcuato, inferne nudo, superne longius ciliato, margine *infero* substricto, superne irregulariter minuteque dentato, apice obtuso, similiter ciliato. *Cellulae superae* 27/27 μ basales 36/54 μ parietibus ubique validis. *Perianthia juvenilia* vix evoluta. *Folia floralia* caulinis simillima, fere ad basin usque spinosa. *Androecia* desunt.

Hab Insulae Novae Hebridae (Aneityum): Gunn comm. (Watts, 78.)

Plagiochila heterospina St., n.sp.

Sterilis magna robusta rigida, dilute brunnea, in cortice dense depresso caespitans. *Caulis* ad 6 cm. longus, regulariter remoteque bipinnatus, ramis primariis 3 cm. longis, reliquis sparsis 1 cm. longis. *Folia caulina conferta*, oblique patula, canaliculatim concava, in plano oblongo-trigona (4 mm. longa, supra basin 2·25 mm. lata) asymmetrica, antice longe decurrentia, margine *supero* e basi

leviter rotundata stricto, remote irregulariterque dentato, margine *infero* stricto nudo vel sub apice paucidenticulato, apice ipso 0·75 mm. lato, similiter armato. *Cellulae* superae 18/18 μ trigonis parvis, basales 18/45 μ trigonis nodulosis.

Hab. Insulae Novae Hebridae (Aneityum): Gunn leg. (Watts, 43^b).

Plagiochila Levierii Schiffn. Aneityum: Gunn, per Lillie.

Plagiochila Lilliena St., n. sp. Aneityum: Gunn, per Lillie, 1911.

Plagiochila palmicola St., n.sp.

Sterilis magna flaccida, intense rufa, in ramis arborum laxe caespitans vel pendula. *Caulis* ad 10 cm. longus, inferne simplex, superne dense longeque bipinnatus, ramis fasciculatim confertis, 4 cm. longis, attenuatis, inferne validis, superne capillaceis. *Folia caulina* contigua, oblique patula, canaliculatim concava, in plano anguste lingulata (4 mm. longa, supra basin 2·25 mm. lata, apice 1 mm. lata) margine *supero* e basi rotundata stricto, irregulariter spinoso, spinis inferis approximatis, superis sparsis remotis, margine *infero* e basi leviter arcuata stricto, remote minuteque dentato, apice oblique truncato, irregulariter valideque trispinoso. *Cellulae* superae 18/27 μ , basales 18/36 μ , trigonis parvis, parietibus validis.

Hab. Insulae Novae Hebridae (Aneityum): Gunn leg. (Watts, 28).

Plagiochila Riddleana St., n.sp.

Sterilis magna rigidula, olivacea, laxe caespitans lateque expansa. *Caulis* ad 10 cm. longus, sparsim longeque ramosus, ramis apice saepe furcatis. *Folia caulina* conferta, oblique patula, canaliculatim concava, subinvoluta, in plano late ovato-trigona (4·5 mm. longa, supra basin 4·5 mm. lata) asymmetrica, margine *supero* e basi semirotunda stricto, regulariter remoteque denticulato, margine *infero* stricto, nudo, sub apice paucidenticulato, apice ipso truncata, 1·25 mm. lata, similiter dentata, dentibus 6, magis approximatis. *Cellulae* superae 18/18 μ , basales 18/54 μ trigonis magnis acutis.

Hab. Novae Hebridae (Epi): Riddle legit (Watts, 21).

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Plagiochila Rossii St., n.sp.

Sterilis mediocris rigida, virens, corticola, laxe intricata lateque expansa. *Caulis* ad 6 cm. longus, simplex vel parum longeque ramosus. *Folia caulinata* conferta, oblique patula, canaliculatum concava, decurvula, in plano late ovato-trigona (5 mm. longa, supra basin 3·5 mm. lata) margine *supero* e basi rotundata semi-rotunda stricto, irregulariter denticulato, margine *infero* stricto nudo, sub apice dense minuteque dentato, apice angustissima, 0·75 mm. lata, tridentata. *Cellulae* superae 27/27 trigonis magnis acutis, basales 27/36 μ , trigonis magnis nodulosis.

Hab. Australia, N. S. Wales (The Jungle, Blackheath): Watts, 1035.

Plagiochila santoensis St., n.sp.

Sterilis minor gracilis rigidula, flavo-rufescens, corticola, dense depresso-caespitans lateque expansa. *Caulis* ad 35 mm. longus, simplex, rarius ramulo auctus, capillaceus fuscus. *Folia caulinata* oblique patula, remotiuscula, leviter concava, in plano anguste oblonga (2·17 mm. longa, medio 0·67 mm. lata) inferne nuda, superne utrinque spinulosa, spinulis plus minus validis, irregulariter distributis, in margine supero magnis numerosis, apice emarginato-bifida, laciniis porrectis, angustis, 0·4 mm. longis cuspidatis, parallelis. *Cellulae* superae 27/36 μ , trigonis parvis, basales 18/36 μ trigonis subnullis.

Hab. Novae Hebridae (Santo): Bowie leg. (Watts, 16.)

Plagiochila serrifolia St., n.sp.

Sterilis parva flaccida, tenerrima, pallide virens, terricola, dense depresso-caespitans. *Caulis* ad 2 cm. longus, simplex, rarius ramulo auctus. *Folia caulinata* contigua, subrecte patula, parum concava, in plano optime rhombea (1·75 mm. longa, 1·25 mm. lata) margine *supero* substricto, inferne nudo, superne remote denticulato, margine *infero*, illo parallelo, stricto, nudo, apice oblique truncata, basi optime parallela, similiter dentata. *Cellulae* superae 36/36 μ , basales 27/45 μ trigonis nullis, cuticula basalis striolata, superne nuda.

Hab. Australia, New South Wales (Wyong): Watts, 1100.

Plagiochila supradecomposita St., n.sp. Aneityum: Gunn, 1911; (Hb. Watts 33 ex p.) Included in return, but not described in this paper.

Plagiochila Victoriae St., n.sp.

Sterilis mediocris, rigida, virens, corticola, laxe intricata, valde aromaticata. *Caulis* ad 6 cm. longus, simplex vel parum longeque ramosus. *Folia caulina* remotiuscula, decurvo-homomalla, in plano ovato-trigona (4 mm. longa, medio infero 2·5 mm. lata) asymmetrica, margine *supero* valde arcuata, subangulato, regulariter valideque dentato, margine *infero* stricto, nudo, apice 0·65 mm. lato, oblique truncato, tridentato, dente mediano multo minore. *Cellulae* superae 18/18 μ , basales 18/54 μ , trigonis magnis acutis.

Hab. Australia, Victoria (Lorne: leg. Miss E. L. Watts) Hb. Watts, 910.

Pleurozia gigantea Weber. Aneityum: Gunn, 1911; (Hb. Watts, 51.)

Preissia commutata (Ldbg.) Nees. Valley of Waters, N. S. Wales.

Ptychanthus effusus St. Futuna: Gunn, 1911 (Hb. Watts, 61, 62, 80).

Ptychanthus rhombilobulus St., n.sp.

Monoica maxima gracilis rigidula rufescens, corticola, laxe intricata lateque expansa. *Caulis* ad 18 cm. longus, tenuis, regulariter remoteque pinnatus, pinnis inferis longioribus, ad 2 cm. longis, paucis pinnulis auctis. *Folia caulina* imbricata, oblique patula, leviter concava, in plano ovata (3·5 mm. longa, medio 2·25 mm. lata) subsymmetrica, apice apiculata, sub apice utrinque paucidentata, margine *supero* e basi rotundata longe arcuato appendiculo basali rotundato, margine *infero* e basi stricta similiter arcuato. *Cellulae* 14/27 μ ubique aequales, parietibus validis *Lobulus* parvus, rhombeus (0·6 mm. longus, 0·4 mm. latus) apice truncatus, angulo apiculato. *Amphigastria* caulina magna, late cordiformia (2·25 mm. longa, supra basin 2 mm. lata) basi profunde

excisa, optime cordata, apice angustiore (3 mm. lato) leviter incisobilobato, lobis late triangulatis acutis, ubique denticulatis. *Perianthia* anguste pyriformia, bene rostrata, 8–10 plicata. *Folia floralia* intima et amphigastrium florale caulinis simillima, lobulo foliorum parvo rhombeo. *Androecia* terminalia, saepe mediana, bracteis 4–8 jugis.

Hab. Novae Hebridae (Santo: Bowie; Epi: Riddle) Watts' 10, 22.

Pycnolejeunea Wattsiana St., n.sp.

Dioica magna gracilis flaccida olivacea, in cortice laxe caespitans lateque expansa. *Caulis* ad 4 cm. longus, breviter remoteque pinnatus, pinnis longioribus paucipinnulatis. *Folia caulina* imbricata, subrecte patula, parum concava apiceque decurvula, in plano oblongo-elliptica (1·5 mm. longa, 0·9 mm. lata) asymmetrica, margine supero longe arcuato, infero substricto, apice rotundata, basi antica rotundata, caulem tegentia, integerrima. *Cellulae* superae 18/18 μ trigonis parvis, basales 27/36 μ trigonis majusculis, parietibus validis. *Lobulus maximus*, linearis (0·83 mm. longus, 0·2 mm. latus) carina leviter adscendens, stricta, levi sinu in folium excurrens, apice recte truncatus, angulo acuto. *Amphigastria caulina* magna, caule plus triplo latiora, sinuatim inserta, ad medium bifida, sinu semirecto obtuso, lobis triangulatis acutis porrectis. *Folia floralia* oblongo-obconica (1·17 mm. longa, sub apice 0·6 mm. lata) apice rotundata, integerrima, *lobulus tertio* brevior, sublinearis, quintuplo longior quam latus, breviter solutus, acutus vel obtusus. *Amphigastrium florale* lobulis aequilongum, oblongum, duplo longius quam latum, apice breviter inciso-bilobatum, rima angusta, lobis acutis. Reliqua desunt.

Hab. Lord Howe Island (Watts legit, 19, 24).

Radula javanica Gotts. Futuna: Gunn, 1911 (Hb. Watts 72).

Radula reflexa Nees et Mont. Tangoa, Santo: Annand, 1909 (Hb. Watts, 4).

Radula tjibodensis Goebl. Port Moresby, Papua: leg. Conroy, Nov. 1911.

Radula Wattsiana St. Rodriguez Pass, Grand Canyon and Blackheath Glen, N. S. Wales.

Reboulia hemisphaerica. Valley of Waters, N.S.W.

Schistochila Blumei G. and J. Aneityum: Gunn (Hb. Watts, 32).

Schistochila hebridensis St., n.sp. Aneityum: Gunn, 1911, per Lillie.

Schistochila integerrima St., n.sp. Aneityum: Gunn, 1911, per Lillie.

Schistochila Lehmanniana (Nees). Etta's Glen, Black Spur, Victoria: Watts, 1906.

Schistochila longifolia St. Aneityum: Gunn, 1911 (Hb. Watts, 40, 48, 52, 56).

Schistochila sumatrana St. Tangoa, Santo: Bowie, 1909 (Hb. Watts, 19); Aneityum: Gunn, 1911 (Hb. Watts, 31).

Symphyogyna dendroides St. Etta's Glen, Black Spur, Victoria: Watts.

Symphyogyna hymenophylla. Leura Glen, N.S.W.

Symphyogyna multiflora St., n.sp.

Dioica minor viridis flaccida terricola, gregarie crescens. *Frons* ad 25 mm. longa, angusta (2–3 mm. lata) *integerrima*, simplex vel pauciramosa; costa valida, ramis oblique patulis, angustis, ex apice innovata et repetito innovata, fronde itaque longissima, ad 4 cm. longa. *Cellulae marginales* 27/54 μ , *submarginales* 27/54 μ basales 54/90 μ . *Involucra* late obtuse, apice longe angusteque laciniata. *Capsula* anguste cylindrica, 2 mm. longa. *Elateres* 1 mm. longi, spiris duplicatis. *Sporae* 14 μ subleves, flavescentes. *Androecia ignota*.

Hab. Australia, New South Wales (Valley of Waters): Watts legit, 1127.

Symphyogyna rhodina Tayl. Valley of Waters, N.S.W.

Symphyogyna semi-involucrata Aust. Valley of Waters, N. S. Wales.

Thysananthus Bowienus St., n.sp.

Diocia maxima gracilis rigidula, in cortice pendula laxeque intricata. *Caulis* ad 25 cm. longus, regulariter remoteque pinnatus, ramis simplicibus, hic illic pinnula auctis. *Folia caulinata* parum imbricata, oblique patula, canaliculatim concava, in plano-oblongo-trigona, (1·67 mm. longa, supra basin 1·9 mm. lata, apice 0·5 mm. lata) symmetrica, marginibus e basi rotundata longe arcuatis, substrictis, apice trigona, angulis minute apiculatis; aliis dentibus interjectis, similibus. *Cellulae superae* 18/18 μ , basales 14/36 μ , trigonis nodulosis in medio et angulis parietum. *Perianthia* (juvenilia) late obconica, inferne nuda, superne longe ciliata, rostro valido. *Folia floralia* et *amphigastrum florale* caulinis simillima. *Androecia* desunt.

Hab. Novae Hebridae (Santo): Bowie leg. (Watts, 18).

Thysananthus hebridensis St., n.sp. Aneityum: Gunn, per Lillie.

Thysananthus planus Sande. Aneityum: Gunn, per Lillie.

Thysananthus spathulistipus Ldbg. Aneityum: Gunn, per Lillie.

Trichocolea australis St. Erskine Valley, Lord Howe Island: Watts, 1911.

Trichocolea minutifolia St., n.sp.

Sterilis pusilla flaccida, pallide virens, corticola, dense depresso-caespitans. *Caulis* ad 25 mm. longus, ramis primariis remotis, 5 mm. longis, dense pinnatis, pinnis 2 mm. longis, superis gradatim brevioribus, frondem trigonam formantibus. *Folia caulinata* imbricata, subrecte patula subquadrata, symmetrica (0·67 mm. longa et lata). Discus basalis integer humillimus, unam cellulam longus, apice quadrifidus, laciniis setaceis, superne breviter bipinnatis,

pinnis primariis 0·17 mm. longis, secundariis 0·08 mm. longis, omnibus remotiusculis. *Amphigastria caulinæ foliis simillima.*

Hab. Australia (Wyong): Watts legit, 950.

Trichocolea samoana St. Aneityum and Futuna: Gunn, 1911 (Hb. Watts, 50 and 70).

Trichocolea tomentosa. Wyong, N.S.W.

Trichocolea Wattiana St., n.sp.

Sterilis pusilla, viridis flaccida, terricola, dense depresso-caespitans lateque expansa. *Caulis* ad 2 cm. longus, regulariter bipinnatus, ramis primariis 6 mm. longis, remotis, sparsim minuteque pinnulatis. *Folia caulinæ exigua, imbricata, erecto-homomalla, asymmetrica, discus basalis integer 0·33 mm. latus, apice oblique truncatus (margine supero 0·33 mm. longo, infero 0·17 mm. longo) apice quadrifida, laciniae primariae divergentes, 0·67 mm. longæ, validæ, attenuatæ, ramis primariis trijugis, inferis 0·5 mm. longis, mediis 0·33 mm. longis, supremis 0·17 mm. longis. Amphigastria caulinæ foliis simillima, symmetrica.*

Hab. Australia (Wyong): Watts, 986.

Zoopsis argentea Hook. Mount Gower, Lord Howe Island: Watts, 1911; also Grand Canyon and Rodriguez Pass, N. S. Wales.

Zoopsis Leitgebiana C. et P. Rotunda, Blackheath, and Lane Cove River, N. S. Wales.

Zoopsis setulosa Leitg. Horseshoe Falls, Blackheath, Centennial Glen, and Wentworth Falls, N. S. Wales.
